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Question Paper Code : 71763

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Second Semester

Electronics and Communication Engineering

EE 6201 – CIRCUIT THEORY

(Common to Biomedical Engineering, Electrical and Electronics Engineering,
Electronics and Instrumentation Engineering, Instrumentation and Control
Engineering, Medical Electronics Engineering)

(Regulations 2013)

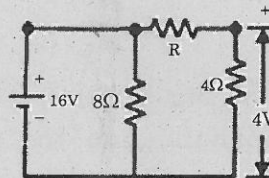
Time : Three hours

Maximum : 100 marks

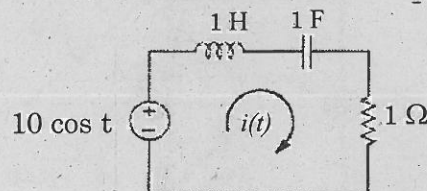
Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Find 'R' in the circuit shown below.

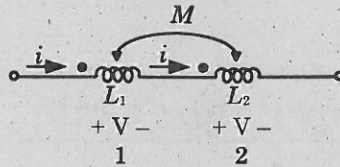


2. Determine the current $i(t)$ for the given circuit



3. A star connected load of 5Ω each is to be converted in to an equivalent delta connected load. Find the resistance be used.
4. A load is connected to a network of the terminals to which load is connected, $R_{th} = 10$ ohms and $V_{th} = 40V$. Calculate the maximum power supplied to the load.

5. Define self inductance and mutual inductance of a coil.
6. Given the circuit, what is the equivalent inductance of the system shown below.



7. Define time constant for RL circuit. Draw the transient current characteristics
8. When a two port network is said to be reciprocal?
9. Draw the phasor diagram of line currents and line voltages of a balanced delta connected load.
10. Distinguish between unbalanced supply and unbalanced load.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Determine the potential difference between points A and B given in fig. 11 (a) (i) (8)

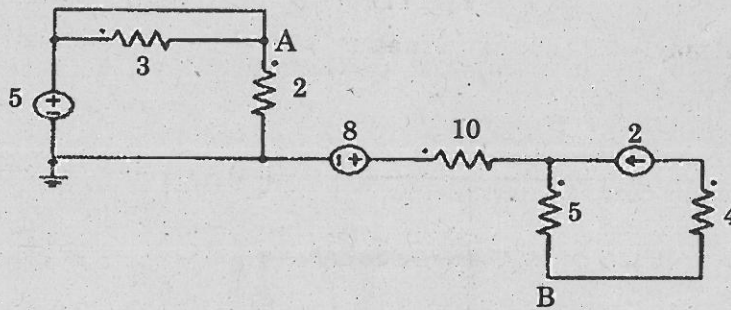


Fig. 11 (a) (i)

- (ii) Using Mesh analysis, find the current I_o in the circuit shown fig. 11 (a) (ii). (8)

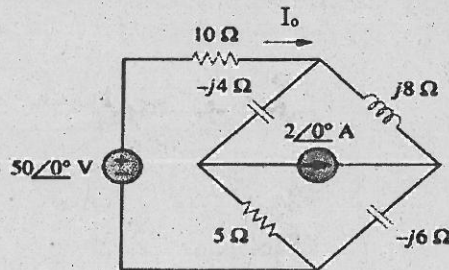


Fig. 11 (a) (ii)

Or